RESPONSE AND REQUEST FOR RECONSIDERATION

Support.

Support for the identification of the antioxidant in claims 1, 10, and 11 as an aromatic amine antioxidant is found on page 12 line 20. The amendment is presented to more clearly define one of the elements of the present invention. No other elements are amended.

Response.

The remarks submitted with the RCE on February 19, 2009, are hereby repeated. The Examiner's attention is again directed to them for consideration, along with the further remarks submitted herewith.

Applicants submit herewith a Declaration from Dr. Patrick Mosier which presents as nearly as practical a direct comparison the composition of the present invention with the teachings of Blythe, U.S. 5,264,005. Table 1 of Blythe, in column 30, discloses four examples. Examples A and B are formulations containing the material of Example B-2, which may be assumed to be the second "B-2" in column 22, that is, a condensate of tetraethylene pentamine and isostearic acid. This is deemed to be the within the scope of present component (b-1). None of the materials in Table 1 contains a Mannich dispersant (present component (b-2)), but the materials of Examples A-2, 6, and 8 are all similar materials, being aminophenol products. None of the examples nor the text discloses an aromatic amine antioxidant, which is presently required component (d).

In Dr. Mosier's Declaration, he prepared and tested the materials as shown in the following Table:

Material, %	Comp Ex 1	Ref Ex. 1	Inv Ex 3
(a) Base Oil (Citgo™ Gp I, 325 N)	83.7	83.7	87.0
(b-1) Acid/amine condensate	4.3	4.3	5.0
(b-2) Mannich dispersant, including 12% oil		6.0	6.0
Aminophenol, including 40% oil	12.0	6.0	
(d) Dialkylphenylamine antioxidant			2.0
Total N content of lubricant	0.34	0.38	0.47
MHT TEOST Test: Total Deposits (mg)	57.4	28.2	7.3

Inventive Example 3 is within the scope of the present claims. Comparative Example 1 is very close to Example B in Table 1 of Blythe. In particular, the aminophenol product that was tested is the same as that of Example A-6 of Blythe (which was actually used in Blythe's Example D). The material of A-6 is quite similar to that of Example A-8.

The material of A-6 is a commercially available material, an amino phenol derived from nitration of polybutenylsubstituted phenol followed by reduction with hydrazine hydrate. On the other hand, the material of A-8 is not commercially available. It is a product derived from nitration of polybutenylsusbstituted phenol followed by reduction or another unspecified reaction with polyethylene polyamine (rather than hydrazine). The materials are believed to be functionally equivalent. Moreover, Blythe seems to indicate that, as far as he is concerned, the selection of one particular material versus another is not of any consequence.

Dr. Mosier subjected the three samples to a MHT TEOST test, which, as he describes in the Declaration, is the thermo-oxidation engine oil simulation test which predicts the high temperature deposit forming tendencies of an engine oil. The reference material from Blythe (Comparative Example 1) is compared against a composition within the present claims (Inventive Example 3), in which the 12% A-6 is replaced with 6 percent of a Mannich dispersant, based on dimethylamine. (Since the amounts of diluent oil in these materials are different, the amounts of active chemical are quite similar.) Also present is 2% aromatic amine antioxidant. The result of these changes is a dramatic reduction in total deposits, from 57.4 mg to only 7.3 mg. It should be noted that this improvement is not merely because of the addition of the antioxidant. In Reference Example 2, the antioxidant is not even present, but half of the material of A-6 is replaced by the Mannich dispersant, and already this leads to a significant improvement. It is the combination of the aromatic amine antioxidant and the Mannich dispersant that leads to the improvement in deposit performance compared with Blythe.

Conclusion.

For the foregoing reasons it is submitted that the present claims are in unobvious and condition for allowance. The foregoing remarks, including those submitted on February 19, 2009, are believed to be a full and complete response to the outstanding office action. Therefore an early and favorable reconsideration is respectfully requested. If the Examiner believes that only minor issues remain to be resolved, a telephone call to the Undersigned is suggested.

Any required fees or any deficiency or overpayment in fees should be charged or credited to deposit account 12-2275 (The Lubrizol Corporation).

Respectfully submitted,

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